

REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1 to 3.

The above amendment is responsive to points set forth in the Official Action.

With regard to the rejection of claim 1 in the use of the term "element polymer product", it is clear that what is intended is a polymer product including a trace element. Nevertheless, to eliminate this issue, the term "element" has been deleted from "element polymer product".

With regard to claim 3, the rejection states that the structure depicted in Figure 4 is disclosed to be a honeycomb structure but does not appear to have the structure of a normal honeycomb.

In reply, the term "honeycomb" broadly includes something resembling a honeycomb in structure or appearance. For example, a building facade having a multicellular pattern of repeated units or a weave with raised squares is included in the definition of the term "honeycomb" as set forth in Webster's Third New International Dictionary, page 1086 (1971), copy enclosed.

If the Examiner is of the opinion that the term "honeycomb like" is preferable, Applicant is agreeable to employing it.

Claims 1 to 3 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 11-123076 in view of Japanese Patents 6-207071 and 2-131578 and 5-76365.

This rejection is respectfully traversed.

A brief discussion of the present invention will be of assistance in appreciating Applicant's reasons for traversal of the rejection.

The present invention is directed to "a bacteria growth carrier including a trace element". The carrier features a polymer product obtained by including a trace element or the trace element and an inorganic nutrient salt for growth of bacteria in a synthetic or natural polymeric material. The polymeric material is sandwiched between layers of inorganic porous material.

Thus, the present invention is characterized by the fact that the inorganic porous material is on both the outer side and inner side of the polymer product and that said polymer product is not intermingled with the porous material (please refer to claim 1, "Detailed description of the invention" in page 4, "Example" on page 10, Fig. 1, etc.).

Thus, the present invention has the characteristic features that:

- a. the inorganic porous material is on both the outside and inner side of the element polymer product and
- b. the polymer product is obtained by including a trace element or the trace element and an inorganic nutrient salt for growth of bacteria.

According to these two features, the outstanding effects include that inside the carrier, a high concentration of trace element and inorganic nutrient salt required for growth of bacteria is present, the surface is made to carry out movement from the inside of the carrier by diffusion, these substances are supplied to bacteria which inhabit the surface, and when bacteria take these in, the growth is continued, and the high-density state of bacteria become maintainable. These effects have been realized for the first time by the present invention.

Such characteristic feature is disclosed or suggested by none of the cited references, alone or combined as follows:

JP 11-123076 discloses a carrier for treatment of organisms including an inorganic, organic or inorganic/organic material preferably having a porous structure containing an adsorptive material and a material for promoting physiological activity in microorganisms. Said material for promoting physiological activity is not suggestive of the presently recited polymeric material sandwiched between layers of porous material.

JP 6-207071 discloses a gelling material useful as a carrier for microorganisms but again, it is not sandwiched between porous layers.

JP 2-131578 discloses a carrier for immobilization of microorganisms which comprises a sheet form product or a three dimensional structure composed of inorganic fiber as the main component. The three dimensional structure can be a honeycomb structure. The presently recited sandwich structure is nowhere disclosed or suggested.

JP 5-76365 discloses a carrier for immobilization of microorganisms in which porous ceramic granules are deposited around thermally plasticized polymer granules.

None of these materials is remotely suggestive of the presently recited polymeric material containing trace elements, sandwiched between porous layers.

For the foregoing reasons, the rejection on prior art is untenable.


No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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